

Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name: INDEVA-Corp. Energy, Inc., DMRE Permit No. 836-5536

KYG040403

Location: Adjacent to US 23 near Allen City

County: Floyd

Receiving Waters Impacted: Daniels Creek, Storm Water Ditch both draining into Levisa Fork of Big Sandy River

II. Socioeconomic Demonstration

1. Define the boundaries of the affected community:

(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The proposed project is located adjacent to US23 in central Floyd County, approximately 1.5 miles east of the city of Allen, approximately 6 miles south of the city of Prestonsburg and approximately 0.5 miles north of the community of Banner. The nearest receiving stream is Daniels Creek which flows into the Levisa Fork of the Big Sandy River, the latter being approximately 0.08 miles from the proposed project area on the opposite side of US23.

2. The effect on employment in the affected community:

(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

See Attachment II 2.

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Attachment II 2.

Employment in the mining industry in Eastern Kentucky is very fluid with mines closing regularly due to coal depletion and new mines opening as coal becomes accessible. When a mine closes there is an immediate impact on the employment of those directly involved in the operation with further impacts felt by those in the local support industry that provide services such as transportation, equipment and engineering.

Floyd County in Eastern Kentucky where the operation is proposed is an area with few employment opportunities compared to elsewhere in the state and nation, which relies heavily on its natural resources as a major source of employment. The surface mine will increase employment in the area and provide higher paying jobs than other industries in the county. Mining pays an average weekly wage of \$773.31 in Floyd County. This is compared to an average weekly wage of \$600.57 in this part of the state (2007 US Bureau of Labor Statistics).

This operation will provide employment opportunities for at least 15 people on site and these will take the form of new jobs or at the very minimum provide work for those that have lost employment due to mine closure. There is also the potential for increased employment off site by requiring services such as equipment sales and repair, engineering services, fuel transportation etc.

It is likely that a new mine will lead to an increase in employment, but at the very least, the mine will avoid a decrease in employment.

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:

(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

Employment in the mining industry in Eastern Kentucky is very fluid with mines closing regularly due to coal depletion and new mines opening as coal becomes accessible. When a mine closes there is an immediate impact on the employment of those directly involved in the operation with further impacts felt by those in the local support industry that provide services such as transportation, equipment and engineering.

The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of Kentucky. Mining pays an average weekly wage of \$773.31 in Floyd County. This is compared to an average weekly wage of \$600.57 in this part of the state (2007 US Bureau of Labor Statistics).

This operation will provide employment directly to approximately 15 workers during the life of the operation. The project will potentially provide additional jobs in other sectors of the economy such as engineering, fuel and transportation, therefore it can be determined that a minimum of 15 households will be positively impacted by this operation.

4. The effect on tax revenues of the affected community:

(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

Tax revenues in this part of Kentucky are affected by the transient nature of employment opportunities. Therefore any increase in the tax base, or at a minimum the maintaining of the status quo prevents there being a negative affect on the local community.

It is anticipated that the surface mining operation will have a projected life of two years and the deep mining operation will have a projected life of seven years. Further, it is anticipated that the surface and deep mine operation will produce approximately 930,113 tons of coal which will give a gross income of approximately \$46,505,650. This will lead to federal, state, local and severance tax revenues in the region of \$2,790,339. Based on a minimum of fifteen people being employed during the course of this operation there will be a total of approximately \$678,573 paid in federal, state and local taxes by the employees. The extra tax revenue generated by this operation especially that at local and state level will be available for spending on the local infrastructure such as roads and schools and attracting other means of employment to the area.

The project will be located in a rural, impoverished area desperately in need of jobs. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:

(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

See Attachment II 5.

6. Discuss any other economic or social benefit to the affected community:

(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The facility, a surface and deep mine will provide employment to approximately 15 workers during the life of the operation. Also, the project will provide additional jobs in other sectors of the economy such as engineering, fuel and transportation. The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of the state. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

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Attachment II 5.

Pre-law surface mining on this site has left high walls, an active deep mine, several large pieces of broken equipment, storage containers, large amounts of trash and debris scattered throughout the proposed permit area. Furthermore, areas of the permit have been left with little or no topsoil and poor vegetative cover, in a state of non reclamation.

Currently, water is discharged from the proposed permit area without passing through any sort of sediment and drainage control structure.

The proposed ponds will collect storm water runoff as it discharges from the mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

Following the conclusion of mining, the area will be reclaimed, providing an enhanced habitat and environment. Additionally, recovery of the coal will increase severance tax revenues, which will be returned to the community. This money can be used for environmental protection such as sewage disposal, sanitation and solid waste disposal, which will have beneficial effects on the existing environment.

III. Alternative Analysis

1. Pollution prevention measures:

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

See Attachment **III 1.**

2. The use of best management practices to minimize impacts:

(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

See Attachment **III 2.**

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:

(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

See Attachment **III 3.**

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KPDES SDAA Form
Attachment III 1.

This project proposes to utilize nine bench ponds and two embankment ponds to collect storm water runoff that naturally flows over areas of disturbance associated with a surface mine as specified by the appropriate regulations specified by the DMRE. Residents in the area of the proposed project have access to a municipal water supply and some have access to sewage utilities. Residents in the area that do not have access to a municipal sewage system discharge wastewater to septic systems or directly to local streams or rivers.

The nearest wastewater treatment plant is in the city of Martin, Kentucky, approximately 4 miles southwest of the project area. The utilization of this treatment plant was investigated but SedCad analysis shows that during a 25 year/24 hour storm, peak elevation in the ponds would be approximately 2146.36 gallons per second. This amounts to 185,445,224.005 GPD which the current line or facility is not capable of handling. The option of another storage pond, closer to the treatment plant, to be used as a "holding" area before controlled release to the facility was also considered. This would require the purchase of additional land which would need to be incorporated into the mining permit. This "holding" pond would also catch additional runoff thus increasing the output to the treatment plant. Utilizing this treatment facility would require the construction of the pond and a dedicated line from the pond to the treatment facility. At a minimum cost of \$20 per foot this would give a minimum cost of approximately \$422,400 for the pipe alone. The routing of any pipeline would require it to cross US 23, the Levisa Fork of the Big Sandy River, Arkansas Creek, some small tributaries of these creeks and several city streets to reach the wastewater plant. The planning, design, engineering and construction costs of laying such a line would be in the region of a further \$1,900,000 and a pumping station would be required at a cost of approximately \$12,000. Assuming Right of Way privileges are granted and compensation with affected landowners can be arranged this will add a projected additional minimum of \$350,000 to the cost, giving a total, at minimum of \$2,684,400. This outlay would have to be borne out prior to any operations taking place on the project area.

Another option investigated was the trucking of the water to the wastewater plant; this would cost approximately \$108 per truck assuming a 2,000 gallon tanker is used. With the estimated peak elevation of 185,445,224 GPD during a 25 year/24 hour storm this would equate to a cost of approximately \$10,014,042. This option would also require a very large increase in road traffic between the proposed operation and the treatment facility and with it the extra environmental and safety concerns that this would bring.

The operation as proposed is expected to generate \$46,505,650 with operating costs of approximately \$42,785,198 over the life of the project. These reflect equipment, payroll, engineering and reclamation fees at \$33 per ton, transportation fees at \$10 per ton and landowner royalties at \$3 per ton. There will also be approximately \$2,790,339 in

federal, state, local and coal severance taxes to be paid at \$3 per ton giving a total of \$45,575,537 leaving a net profit of \$930,113.

The primary discharge from the proposed mining area will be storm water run-off and this will be channeled into sediment ponds prior to discharge. This will allow settling to occur so that lowering of water quality will be reduced based on applicable regulations concerning discharges from the project site.

The proposed ponds will collect storm water runoff as it discharges from the mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

The following BMP's will be utilized to aid in sediment control during the construction of the sediment ponds, Best management practices may include, but are not limited to, any of the following, singly or in combination:

1. Minimizing all necessary disturbances
2. Construction of temporary berms.
3. Diversion ditches, placement of rip-rap, silt fences, straw bale barriers, etc.
4. Land grading, reshaping and immediate revegetation of all disturbed areas
5. Construct ponds in periods of Low Flow or dry weather.

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Attachment III 3.

The proposed project area is a surface and deep mining operation, which will recover coal reserves by the contour and deep methods of mining. Water is not an integral part of surface and deep mining operations, however, discharge from the project area will be recycled as practicable. Water in the project area can be used for dust control measures, primarily on roads and a small amount can be used on operational areas of both the surface and deep mine. However, there are limiting factors to the amount of water that can be directly used on the proposed area. This is an area with slopes averaging more than 15% and water cannot be put on ground slopes greater than 6% because of runoff. Also no more than 1,000 gallons per acre per day can be put on the surface due to soil erosion considerations and the project will only have approximately 2 acres of slope less than 6% at any one time. Additionally, there are no other operations on-site or near-site in which water is used as part of the process.

The facility is projected to have an operational life of 2 years on surface and 7 years of deep mining with all retention structures proposed to be removed within another 3 years. The local communities have access to municipal drinking water, therefore, the use of the water for domestic purposes would be of no benefit to the local communities.

III. Alternative Analysis - continued

4. Application of water conservation methods:

(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally.

5 Alternative or enhanced treatment technology:

(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

1) Waste Water Treatment Plant – This was investigated and the cost for a stand-alone treatment plant capable of handling the potential amount of water run off from the project is approximately \$400,000, which would have to be borne out prior to any operations taking place on the project area. Operational and topographic considerations were also taken into account as due to the size of a treatment plant for this operation, the dynamic nature of the project and requirements of the DMRE concerning reclamation the positioning of this equipment would be extremely problematical, especially during the deep mining phase of the project. Any treatment plant would need to be constructed and dismantled at least twice during operations adding a further \$200,000 to the operation. The operation is proposed to generate \$46,505,650 with operating and tax costs of \$45,575,537 leaving a profit of \$930,113.

2) The use of an evaporation plant was considered, however a plant with the capacity of 150gph, which is considerably less than what would be required for a 25 year/24 hour storm event is approximately \$100,000. The project would require several of these plants and the same concerns regarding DMRE regulations concerning reclamation make this, like a treatment plant, not a viable alternative.

3) Wetland – The primary need for treatment of the water is sedimentation control and wetlands are not effective for treating sediment due to the fact that over time they will fill with silt and dry up. Additionally, a wetland used for water treatment would require a great deal of space, which is not available in this project area.

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:

(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

Pre-law surface mining on this site has left high walls, an active deep mine, several large pieces of broken equipment, storage containers, large amounts of trash and debris scattered throughout the proposed permit area. Furthermore, areas of the permit have been left with little or no topsoil and poor vegetative cover, in a state of non reclamation

Currently, water is discharged from the proposed permit area without passing through any sort of sediment and drainage control structure.

The proposed ponds will collect sediment and storm water runoff as it discharges from a mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

7. Seasonal or controlled discharge options:

(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally. However, the storage of water for controlled release was investigated but due to DMRE regulations governing the operation appertaining to land stabilization and reclamation it is not possible to leave areas large enough to store water on without any leaving the confines of the project area.

III. Alternative Analysis - continued

8 Land application or infiltration or disposal via an Underground Injection Control Well

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of proposed treatment system.)

An alternative to surface discharge from the project area is subsurface disposal. There are several abandoned mine voids in the vicinity of the project area as deep mining has been conducted in the Elkhorn #3 seam. However, these are not favored for underground disposal due to the potential for blowout. This combined with the fact that any blowout from these works would occur on land not under the ownership or control of the operating company and would invariably involve compensation makes this an economically unattractive alternative. The possibility of the drilling of injection wells for subsurface storage of water has been examined but at a cost of approximately \$250,000 per well and the need for at least four wells this would remove the projected profit for the operation.

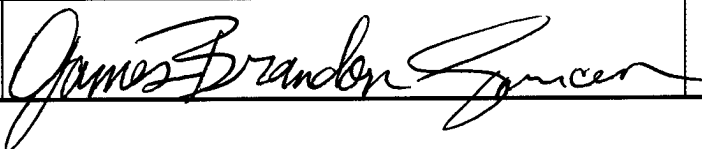
In addition to potential safety impacts associated with subsurface disposal, this alternative would reduce the quantity of water available to support downstream aquatic communities. Thus, there would be potential impacts to fish and other aquatic communities.

9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

See Attachment III 9.

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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